Newtown Creek
Early Action Concept
NYSDEC Briefing

ANCHOR QEA

November 2018

Why We Are Here/Significant Facts to Know

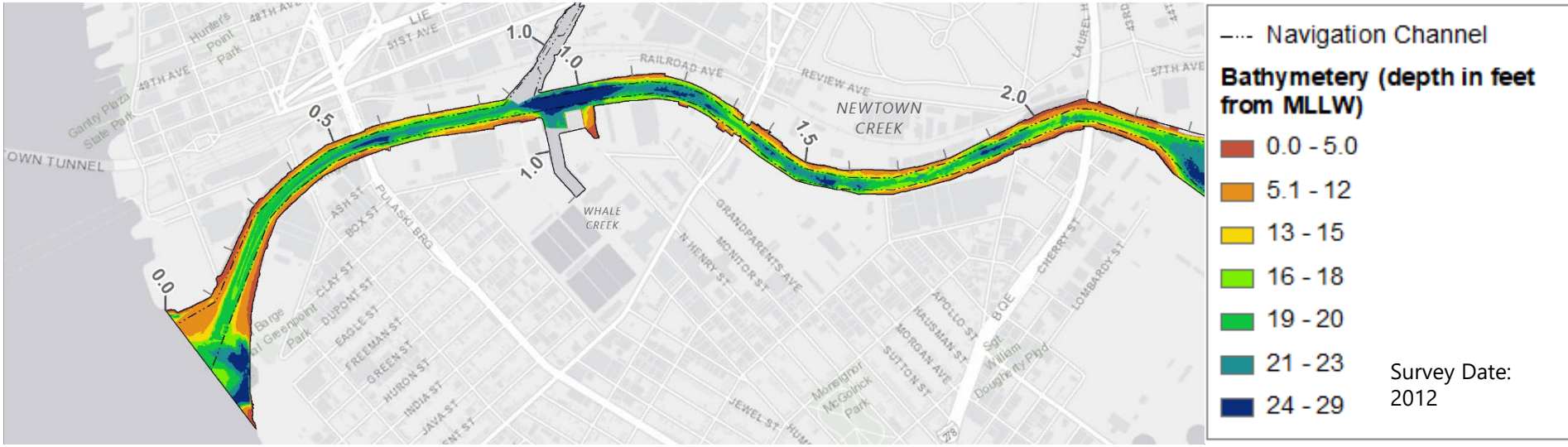
- NCG wants to complete an Early Action (EA) that aligns with Superfund reforms and stakeholder desire for action vs. studies
- Complex site with CWA and CERCLA interactions
  - NCG and NYC have an interest in establishing common remedy metrics
- Role of background conditions consistent with regional conditions, including current and future CSO/MS4 discharges and industrial presence, is important in remedy considerations
- Presented an EA concept to EPA Region 2 and EPA HQ for CM 0-2 that accelerates a remedy followed by monitoring to prove the conceptual site model (CSM) and remedy success

Process / Path Forward Slide

- New Administrative Order on Consent to implement a Focused Feasibility Study (FFS) for CM 0-2
  - FFS will objectively evaluate a range of potential EA scenarios and support evaluation of potential recontamination pathways
  - Second Order issued for design and construction
- EPA and NYSDEC both will review and comment on the Draft FFS under the CERCLA process
- Navigation channel depth will be evaluated through appropriate regulatory mechanisms. That evaluation may not be completed until after the remedy selection ROD for the Early Action

Authorized Navigation Channel CM 0-2

- The creek is a highly functional industrial waterway despite the fact that it has not been maintained since 1974
- CM 0-2 channel depths currently range from about 18 to 23 feet
- Authorized depth is 23 feet in CM 0-2 and shallower in tributaries
- CM 0-2 has not been dredged since 1949 (with the exception of limited removal in CM 0-1 for access to the Newtown Creek WWTP)
- Early Action will maintain existing water depths which are sufficient for current and anticipated future navigation and commerce uses



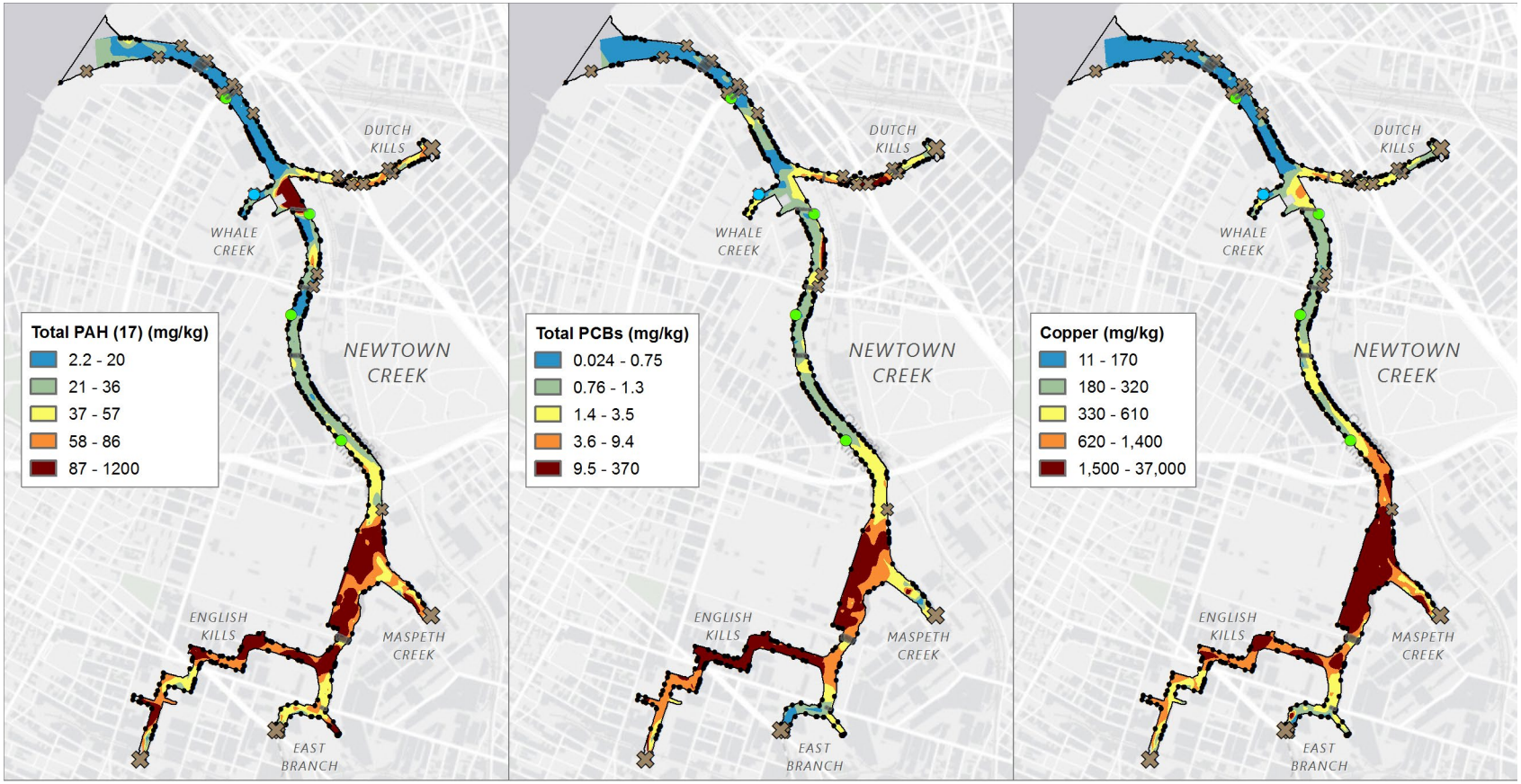
Newtown Creek Site-wide CSM

- Industrial, highly constructed "dead end" system with hardened shoreline and limited habitat; reflective of urban environment
- Upstream water inputs limited to CSOs, stormwater, and groundwater
- Surface sediment concentrations of COPCs are generally higher in CM2+ and tributaries compared to CM 0-2 due to:
  - East River's influence in CM 0-2
  - Origin of sources and distribution/mixing
- Groundwater flows tend to be higher upstream of CM 2 compared to downstream
- NAPL and Ebullition:
  - Minimal within CM 0-2
  - CM 2+ subject to ongoing investigations

Newtown Creek CM 0-2 CSM

- CM 0-2 is a depositional system with surface sediment concentrations generally within the range of background
  - Remaining areas above background addressed in EA
- Key contaminants of concern are PCBs, PAHs, and copper
- NAPL presence in CM 0-2 is very limited and determined to not be mobile
- Extensive evaluations in CM 0-2 have confirmed that NAPL, ebullition, groundwater, point source runoff and shoreline erosion do not pose a significant threat of recontamination

Newtown Creek – Representative Distribution of Surface Sediment Concentrations



NCG Early Action Concept CM 0-2

- Targeted removal of areas in CM 0-2 with surface sediments with PCB, PAH, or copper concentrations above target Remedial Action Levels (RALs)
  - PCBs: 1.2 – 1.4 ppm
  - PAHs: 65 – 85 ppm
  - Copper: 400 – 500 ppm
- Will achieve background surface sediment concentrations in CM 0-2
- Monitoring
  - Comprehensive monitoring and verification program will be implemented to determine remedy success

Surface Sediment above PCB, PAH or Cu RALs

Early Action Areas

Range of Target Areas for Early Action

Areas Exceeding the Following RALs:

COC	Remedial Action Level (mg/kg)
Total PCBs	1.2
Total PAH (17)	65
Copper	400

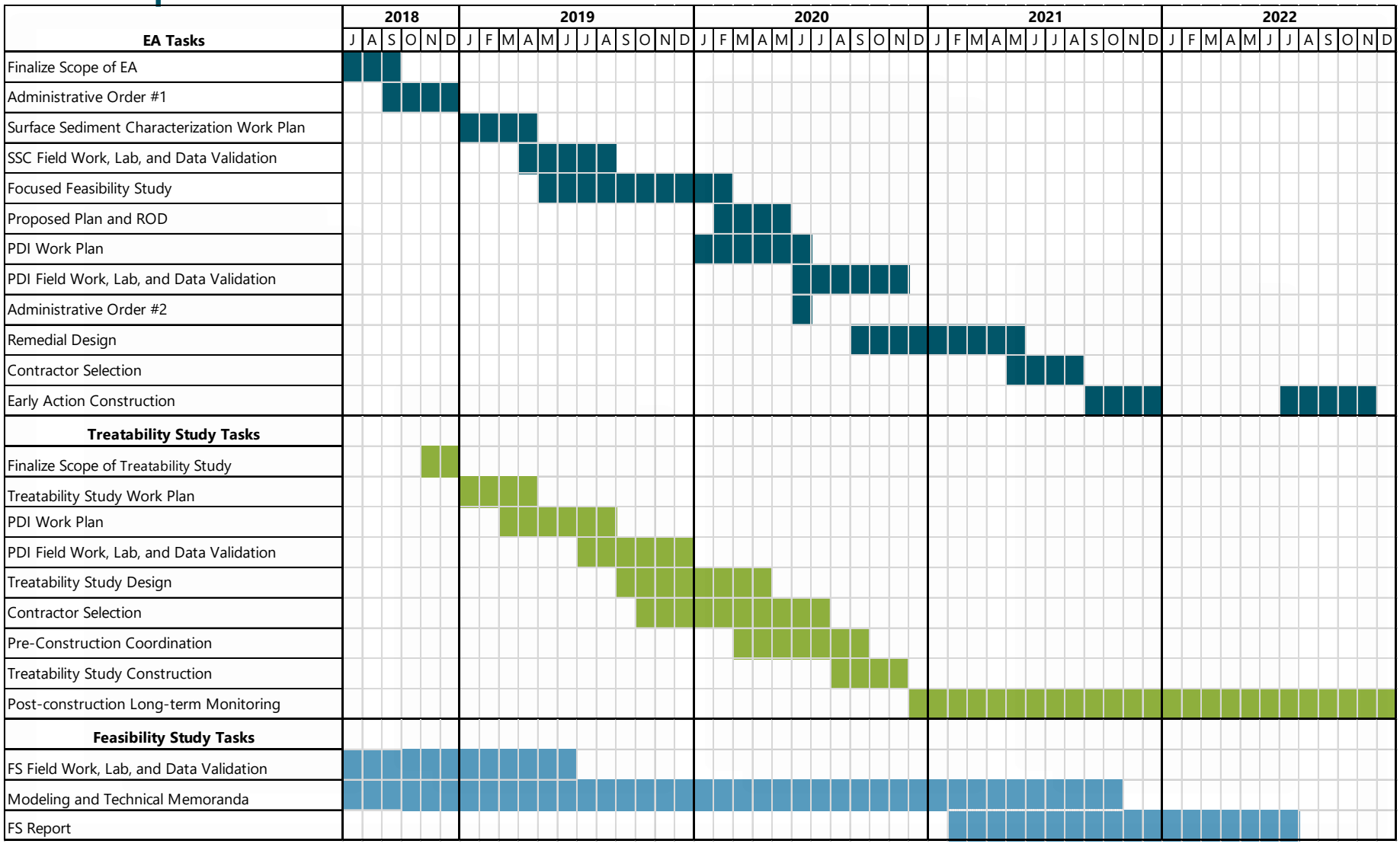
COC	Remedial Action Level (mg/kg)
Total PCBs	1.4
Total PAH (17)	85
Copper	500

0 2,000
Feet

Benefits and Timing for Early Action Concept

- Benefits of Early Action
  - Helps coordinate CERCLA and CWA actions by providing certainty in cleanup goals
  - Allows for faster remedial action in nearly half of the creek in advance of the final ROD, with monitoring to confirm effectiveness
  - Alleviate the local community's concerns about a protracted cleanup and uncertainty about the future of the creek
  - Economic benefit of getting a significant portion of the site remediated within an expedited timeframe
  - Takes advantage of source control actions already implemented in lower portion of creek
- Timing of Early Action
  - FFS complete and Record of Decision by mid-2020
  - Second Order issued for design and construction
  - Remedy constructed in 2021 and 2022

Proposed Schedule



Potential Recontamination Pathways in CM 0-2

- Extensive evaluations have confirmed that recontamination pathways to levels above background do not pose a threat to the EA remedy in CM 0-2
  - Ebullition
  - NAPL
  - Groundwater
  - Point Sources
  - Shoreline Erosion

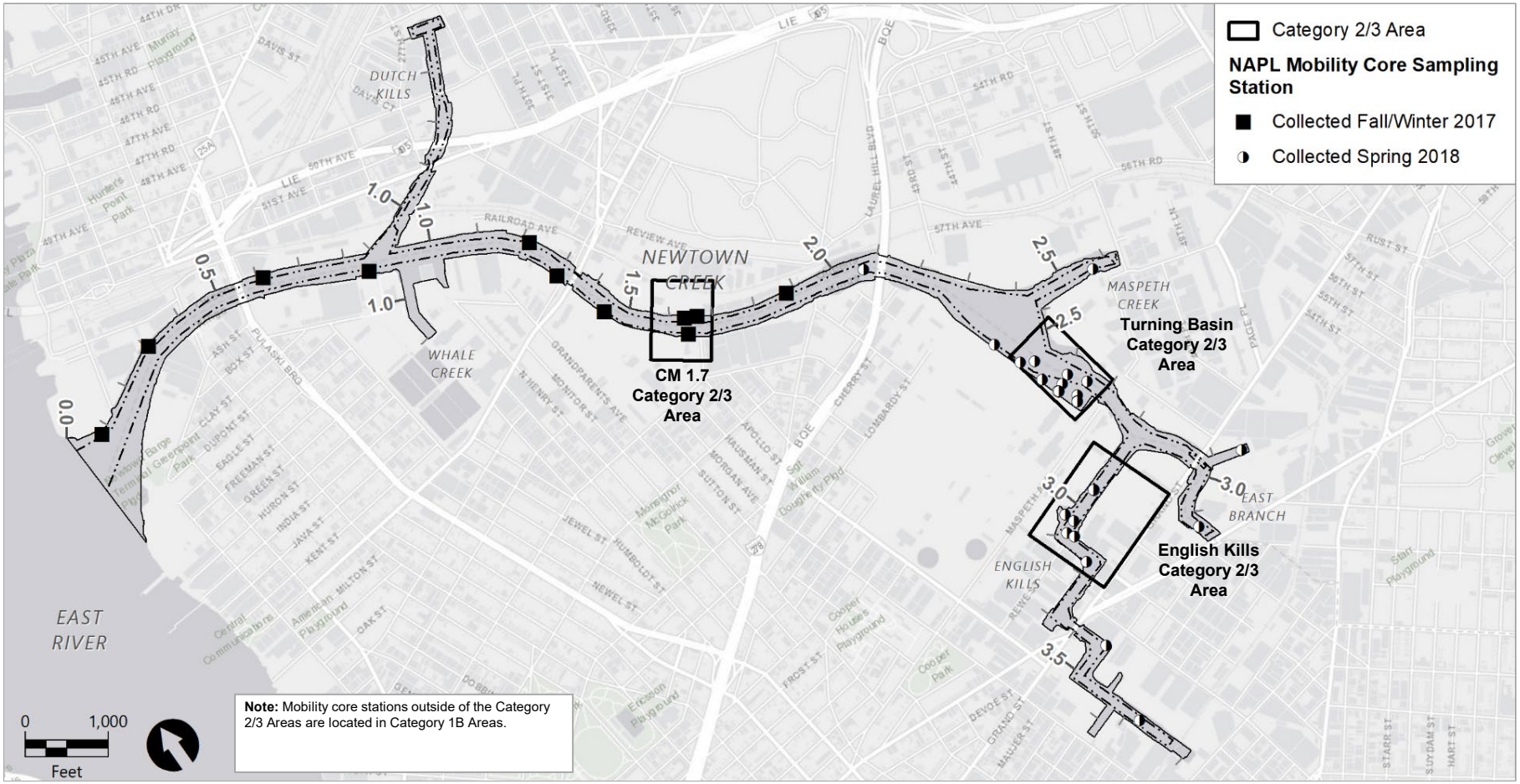
Ebullition is Not a Remedy Driver in CM 0-2

- Field surveys conducted in 2015 and 2016 to characterize the presence and extent of gas ebullition
- During these surveys, minimal ebullition observed in CM 0-2
  - No data collection occurring in CM 0-2 because of small areas observed and low amount of associated sheen did not justify need to quantify ebullition

NAPL is Not a Remedy Driver in CM 0-2

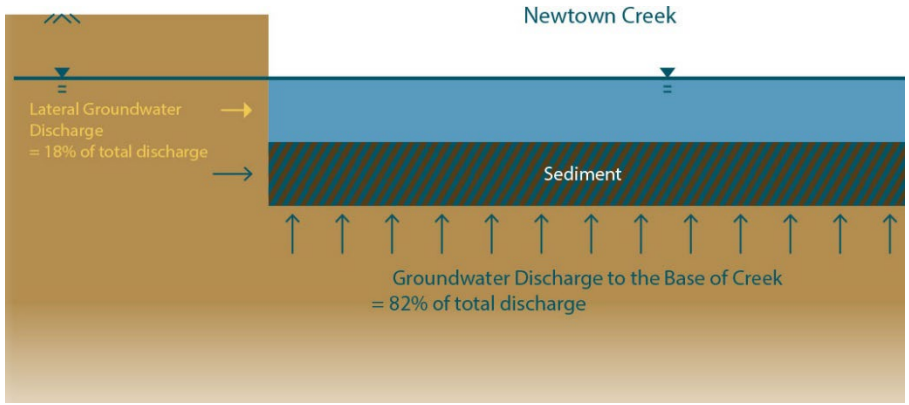
- Extensive sampling conducted throughout Newtown creek to characterize NAPL presence and extent
- For CM 0-2:
  - NAPL not observed in surface sediment
  - NAPL identified in subsurface sediment generally discontinuous and in residual form (i.e., blebs)
- NAPL mobility tests performed on samples throughout CM 0-2 at locations and depths containing the highest apparent NAPL saturation
  - No NAPL mobility observed in any sample in CM 0-2

Fall/Winter 2017 NAPL Mobility Core Stations



Groundwater Discharge in CM 0-2 is Relatively Low Compared to Rest of Creek

- Extensive groundwater evaluation process, including seepage measurements collected by USGS (contracted by USEPA), characterized groundwater discharge to the Creek including CM 0-2
- 21% of the groundwater discharge to the creek occurs in CM 0-2
- In CM 0-2: 82% of total groundwater flow is discharged to the base of creek sediment and 18% comes from lateral discharge through permeable shorelines
- Lateral discharges within CM 0-2 are among the lowest for the Study Area and have negligible effect on surface water quality



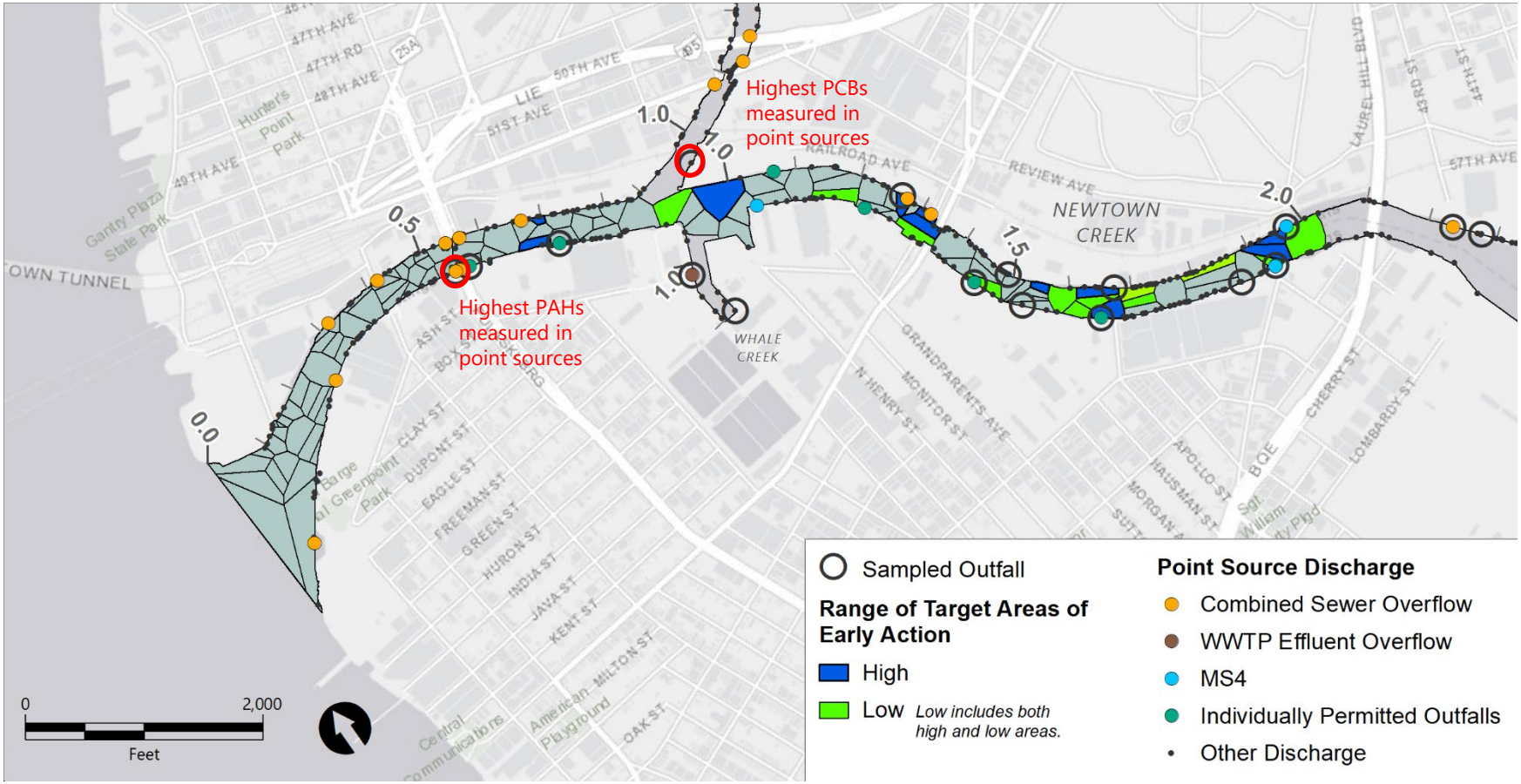
Groundwater Has Negligible Effect on Surface Sediment or Surface Water Quality in CM 0-2

- Preliminary conclusions further evaluated in FFS:
  - Annual chemical loads from groundwater to the base of sediment contribute the following percentages of mass to the total chemical mass already in the sediment:
    - TPAH: 0.02%
    - TPCB: 0.0001%
    - Dissolved Cu: 0.0006%
  - Chemical loads from groundwater:
    - Contribute negligible chemical mass
    - Have negligible effect on the surface sediment or the overlying surface water

Point Source Discharge to CM 0-2

- Extensive characterization of point sources
- Impact of point sources is minimized in CM 0-2 due to influence from East River
- Point sources are generally within the range of, or lower than, proposed RALs, with two exceptions:
  - PAHs in Con Edison 11th Street Conduit individually permitted discharge
  - PCBs in Hugo Neu Schnitzer (AKA Sims Hugo Neu) stormwater
  - Any localized effects will be identified through monitoring program, although not anticipated to affect remedy success
- Performance monitoring designed to address remedy success and ability to achieve SWACs

Point Source Map with Sampled Discharges



Shoreline Erosion is not a Remedy Driver in CM 0-2

- Relatively few areas of potentially erodible shorelines in CM 0-2
- Where potentially erodible shorelines do exist, they are generally not adjacent to areas of elevated sediment concentration
- Eroded shorelines are already accounted for in sediment sampling

Summary

- The EA approach has considered potentially significant ongoing sources to CM 0-2 (emanating from outside of the RI/FS study area)
- Evaluations indicate that ongoing sources will not negatively impact EA remedy success
- FFS will objectively evaluate a range of potential EA scenarios and support further evaluation of potential recontamination pathways
- NCG is seeking NYSDEC's support, along with EPA, for the EA initiative and to undertake the FFS that will evaluate remedial options for an EA

Questions/Discussion